Chuang, Tieh-Hung

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Summary

Software Developer with 10 years of programming experience. Comfortable in a large code base and multithreading development. Write clear, maintainable code. Excellent debugging skills. Eager to explore new technologies.

Skills

Programming: C/C++(expert), Python(proficient), Objective-C(prior experience), MFC(prior experience), CUDA(prior experience), HLSL(prior experience), Direct3D(prior experience), OpenGLES(prior experience)
Other: XCode, Visual Studio, Perforce, Git

Work Experience

Technical Consultant
Next Media Animation, Taipei, Taiwan, July 2012 - Present
iOS App
- Developed news player in native code to replace the HTML5 solution.
- Designed a template of animation player app to simplify the development process.

Toon Effect Maya plugin
- Provided solutions to optimize edge finding. Using object labeling to achieve fast visibility culling.
- Provided solutions to improve edge rendering. Using texture coordinate map to fix depth testing issue.

Facial Expression Tool
- Provided solutions to fix audio / video sync issue.

iOS Game, July 2011 - November 2013
P.R.O.B.E.
- Developed an universal iOS Sci-Fi puzzle game.
- Developed an engine to build hex grid world using OpenGL ES 2.
- Developed an editor for designer to edit and test on iPad.
- https://www.youtube.com/watch?v=Z2PPcCa4SPA

4x4
- Developed a magic square math puzzle game.
- Reduced all combinations of Magic Square to one seed and designed an algorithm to generate all sets.

R&D Engineer
Next Media Animation, Taipei, Taiwan, August 2009 - June 2011
CUDA Optical Flow
- Optimized the algorithm for the alignment of facial expression high maps.
- 5X faster by implementing Red-Black SOR in CUDA.

Video Dump Filter
- Developed a DirectShow renderer filter to dump video streams from files and devices.
- Developed a library to hide all COM and DirectShow details.
- Handled color space transformation and deinterlacing.

Face Stitching Tool
- Developed a tool to merge Light Stage scanned faces.
- Used Horn's "closed form solution of absolute orientation" with user input to align geometries.

CUDA
- Presented the CUDA programming guide to the team.
- Slide: http://goo.gl/6eUzBH

High Dynamic Range Imaging
- Presented the HDRI knowledge and algorithm to the team.
- Implemented an algorithm using linear least square optimization (Paul Debevec, SIGGRAPH 97).
- Slide: http://goo.gl/hUVMJk

Senior Software Engineer
Corel Corporation, Taipei, Taiwan, December 2006 - August 2009
TVX
- Developed an ActiveX to manage multiple components for TV applications.
- Adopted by I-O Data to develop their own TV application.

Stand Alone TV Application
- Developed a TV application for incubation using TVX and in-house D3D skin library.
- Integrated D3D skin rendering with Overlay Mixer filter.

SkinPlus
- Maintained the in-house D3D skin library.
- Extended the function for editing skin effects using XML.

Electronic Program Guide and Subtitle on D3D
- Integrated the EPG and Subtitle filter with D3D rendering to achieve "on video transparent UI".

Webcam as Light Sensor
- Proposed an idea to use webcam as a light sensor.
- Developed a COM component to adjust the brightness of video based on environment lighting.

Software Engineer
InterVideo, Taipei, Taiwan, March 2006 - December 2006
InstantOn
- Maintained a TV and media player application on embedded Windows XP.

TVX
- Developed a TV component for application (InterVideo Home Theater).

Software Engineer
DynaColor, Taipei, Taiwan, January 2004 - February 2006
Windows application for Digital Video Recorder
- Developed an application using MFC and WinSock to watch and record 16 live video streams.
- Developed a skin library using windows region and GDI.

Central Monitor System
- Developed an application to manage multiple channels and different cameras.

Font Editor
- Developed a font editor for OS of digital video recorder using C# and .Net framework.

Education

B.S. in Physics
National Taiwan University, Taipei, Taiwan, June 2001.